

CLAIMS

1. A voice dialogue system comprising:
 - speech recognition means for performing speech recognition on the user's utterance;
 - dialogue control means for controlling a dialogue with said user according to a scenario previously given, based on the speech recognition result by said speech recognition means;
 - response generating means for generating an answering sentence corresponding to the contents of said user's utterance, responding to a request from said dialogue control means; and
 - speech synthesis means for performing speech synthesis processing to one sentence in said scenario reproduced by said dialogue control means or said answering sentence generated by said response generating means; and
 - said voice dialogue system wherein,
 - said dialogue control means requests said response generating means to generate said answering sentence as the occasion demands, based on the contents of said user's utterance.
2. The voice dialogue system according to claim 1, wherein;
 - said dialogue control means controls said dialogue with said user based on the attribute of said answering sentence generated by said response generating means.
3. The voice dialogue system according to claim 1, wherein;
 - said scenario is made by combining an arbitrary number of plural types of blocks in a respectively predetermined format providing for one turn of a dialogue with said user, in an arbitrary order.
4. The voice dialogue system according to claim 3, comprising;
 - as one of said blocks, a first block having,

a first reproducing step for reproducing said one sentence to urge said user to utterance,

a first utterance await and recognition step for awaiting said user's utterance after the above first reproducing step, and when said user uttered, recognizing the contents of the above utterance, and

a second reproducing step, following said first utterance await and recognition step, for reproducing corresponding one sentence previously provided, depending on whether the contents of the above utterance is positive or negative.

5. The voice dialogue system according to claim 4, comprising; as one of said blocks, a second block having a first generation of answering sentence request step, when the contents of said user's utterance recognized in said first utterance await and recognition step is neither said positive nor said negative, for requesting said response generating means to generate said answering sentence corresponding to said contents of said user's utterance.

6. The voice dialogue system according to claim 5, comprising; as one of said blocks, a third block having a first loop in which if the attribute of said answering sentence, that was generated by said response generating part responding to said request in said first generation of answering sentence request step, is the first loop type, it returns to said first utterance await and recognition step.

7. The voice dialogue system according to claim 5, comprising; as one of said blocks, a fourth block having a second loop in which if the attribute of said answering sentence, that was generated by said response generating part responding to said request in said first generation of answering sentence request

step, is the second loop type, it awaits said user's utterance, and when said user uttered, it recognizes the contents of the above utterance, and then returns to said generation of answering sentence request step.

8. The voice dialogue system according to claim 5, comprising; as one of said blocks, a fifth block having,
 - determination step for determining the attribute of said answering sentence, that was generated by said response generating part responding to said request in said first generation of answering sentence request step,
 - a first loop in which if said attribute of said answering sentence determined in the above determination step is the first loop type, it returns to said first utterance await and recognition step, and
 - a second loop in which if said attribute of said answering sentence determined in the above determination step is the second loop type, it awaits said user's utterance, and when said user uttered, it recognizes the contents of the above utterance, and then returns to said generation of answering sentence request step.
9. The voice dialogue system according to claim 3, comprising; as one of said blocks, a sixth block having,
 - a second reproducing step for reproducing said one sentence omittable in said scenario if needed,
 - a second utterance await and recognition step, for awaiting said user's utterance after said second reproducing step, and when said user uttered, for recognizing the contents of the above utterance, and
 - a second generation of answering sentence request step, following said second utterance await and recognition step, for requesting said response generating means to generate said answering sentence corresponding to said contents of

said user's utterance.

10. The voice dialogue system according to claim 9, comprising;
as one of said blocks, a seventh block having a third loop in which if the attribute of said answering sentence, that was generated by said response generating part responding to said request in said second generation of answering sentence request step, is the third loop type, it returns to said second utterance await and recognition step.

11. A voice dialogue method comprising:

a first step for performing speech recognition on the user's utterance;

a second step for controlling a dialogue with said user according to a scenario previously given, based on the results of said speech recognition, and if needed, generating an answering sentence corresponding to the contents of said user's utterance; and

a third step for performing speech synthesis processing to one sentence in said reproduced scenario or said generated answering sentence; and

said voice dialogue method wherein,

in said second step, said answering sentence corresponding to the contents of said user's utterance is generated as the occasion demands, based on the contents of said user's utterance.

12. The voice dialogue method according to claim 11, wherein;
in said second step, said dialogue with said user is controlled based on the attribute of said generated answering sentence.

13. The voice dialogue method according to claim 11, wherein;
said scenario is made by combining an arbitrary number of

plural types of blocks in a respectively predetermined format providing for one turn of a dialogue with said user, in an arbitrary order.

14. The voice dialogue method according to claim 13, comprising;
as one of said blocks, a first block having,
a first reproducing step for reproducing said one sentence to urge said user to utterance,
a first utterance await and recognition step for awaiting said user's utterance after the above first reproducing step, and when said user uttered, recognizing the contents of the above utterance, and
a second reproducing step, following said first utterance await and recognition step, for reproducing corresponding one sentence previously provided, depending on whether the contents of the above utterance is positive or negative.
15. The voice dialogue method according to claim 14, comprising;
as one of said blocks, a second block having a first generation of answering sentence request step, when the contents of said user's utterance recognized in said first utterance await and recognition step is neither said positive nor said negative, for generating said answering sentence corresponding to said contents of said user's utterance.
16. The voice dialogue method according to claim 15, comprising;
as one of said blocks, a third block having a first loop in which if the attribute of said answering sentence generated in said first answering sentence generating step is the first loop type, it returns to said first utterance await and recognition step.
17. The voice dialogue method according to claim 15, comprising;

as one of said blocks, a fourth block having a second loop in which if the attribute of said answering sentence generated in said first answering sentence generating step is the second loop type, it awaits said user's utterance, and when said user uttered, it recognizes the contents of the above utterance, and then returns to said answering sentence generating step.

18. The voice dialogue method according to claim 15, comprising; as one of said blocks, a fifth block having,

determination step for determining the attribute of said answering sentence generated in said first answering sentence generating step,

a first loop in which if said attribute of said answering sentence determined in the above determination step is the first loop type, it returns to said first utterance await and recognition step, and

a second loop in which if said attribute of said answering sentence determined in the above determination step is the second loop type, it awaits said user's utterance, and when said user uttered, it recognizes the contents of the above utterance, and then returns to said answering sentence generating step.

19. The voice dialogue method according to claim 13, comprising; as one of said blocks, a sixth block having,

a second reproducing step for reproducing said one sentence omittable in said scenario if needed,

a second utterance await and recognition step, for awaiting said user's utterance after said second reproducing step, and when said user uttered, for recognizing the contents of the above utterance, and

a second answering sentence generating step, following said second utterance await and recognition step, for generating said answering sentence corresponding to said

contents of said user's utterance.

20. The voice dialogue method according to claim 19, comprising;
as one of said blocks, a seventh block having a third loop in which if the attribute of said answering sentence generated in said second answering sentence generating step is the third loop type, it returns to said second utterance await and recognition step.

21. A robot apparatus comprising:

speech recognition means for performing speech recognition on the user's utterance;

dialogue control means for controlling a dialogue with said user according to a scenario previously given, based on the speech recognition result by said speech recognition means;

response generating means for generating an answering sentence corresponding to the contents of said user's utterance, responding to a request from said dialogue control means; and

speech synthesis means for performing speech synthesis processing to one sentence in said scenario reproduced by said dialogue control means or said answering sentence generated by said response generating means; and

said robot apparatus wherein,

said dialogue control means requests said response generating means to generate said answering sentence as the occasion demands, based on the contents of said user's utterance.